Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–IV EXAMINATION – WINTER 2015

Subject Code: 141702 **Date:06/01/2016**

Subject Name: Transducers

Time: 02:30pm to 05:00pm **Total Marks: 70**

Instructions:

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

Q.1	**(a)**	Define the Instrumentation. Discuss the different measurements required for statistical analysis.	**07**
	(b)	Differentiate between the following (i) Active and Passive transducers (ii) Analog and digital transducers (iii) Primary and secondary transducers	**07**
Q.2	**(a)**	Explain radiation pyrometer.	**07**
	(b)	Describe in detail reflection level switches.	**07**
		OR	
	(b)	Define viscosity. Explain capillary viscometers.	**07**
Q.3	**(a)**	What is a Villari Effect? Explain construction and working of force transducer in which Villari effect used.	**07**
	(b)	Define pH. Explain the construction and working of a gas electrode pH measurement system.	**07**
		OR	
Q.3	**(a)**	What is a Strain Gauge? Define Gauge factor and explain Bonded- Unbonded strain Gauge.	**07**
	(b)	Explain inductive methods of thickness measurement.	**07**
Q.4	**(a)**	What is purpose of Density Measurement? Describe magnetic method of density Measurement.	**07**
	(b)	What is telemetry system? Describe any one telemetry system.	**07**
		OR	
Q.4	**(a)**	List the various types of electrical methods of liquid level measurement. Explain any one of them.	**07**
	(b)	Explain the rotameter with its advantages & disadvantages.	**07**
Q.5	**(a)**	Explain the construction and working of McLeod gauge.	**07**
	(b)	Explain how a pitot tube can be used for measurement of flow.	**07**
		OR	
Q.5	**(a)**	Describe the method for measurement of temperature with use of i) RTD ii) thermistor.	**07**
	(b)	What is an XY recorder? Explain with diagram, the working of XY recorder.	**07**

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